

Work Order ID 151649

Wednesday, October 05, 2016 3:08:46 PM

647.7703
B 151649
REV A2

151649

Page 1

Item ID: 647.7703

Revision ID:

Item Name: Strut Assembly

Start Date: 9/20/2016 Start Qty: 8.00

Required Date: 10/19/2016 Req'd Qty: 8.00

Reference:

Accept

N900040100

Setup Start

NS1

Stop

NS2

Cust Item ID:

Customer:

Approvals:

Process Plan:

DAS
21
9-89

Date:

OCT 06 2016

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

647.7700

A2

110

Pick Kit

0.00

110

Packaging

Memo

0.03

Packaging

8 16-12-06
JSC

120

Weld per dwg A/R 4130 rod Batch: 127925

0.00

120

Large Fab

Memo

0.13

Large Fab

1- ASSEMBLE AND WELD AS PER DWG

***IMPORTANT DIMENSION IS 8.35" ***

8 16-12-06
JSC

130

QC9- Inspect visual per QSI004- Fusion Welds

0.00

130

QC

Memo

0.03

Quality Control

⑧ 16-12-05 PD

Work Order ID 151649

Wednesday, October 05, 2016 3:08:46 PM

151649

Page 2

Item ID: 647.7703 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Strut Assembly
Start Date: 9/20/2016 Start Qty: 8.00 ***8*** Cust Item ID:
Required Date: 10/19/2016 Req'd Qty: 8.00 ***8*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140	QC5- Inspect part completeness to step on W/O	0.00							
140									
QC	Memo	0.03							
Quality Control									

150	Outsource process-Cadplate per QSI017 4.1.9.1	0.00							
150									
Outsource3	Memo	159.99							
Outsource process - Cad plate	Issue P/O : <u>34576</u>								
	C of C is required								
	PLEASE NOTE ON PO: CAD PLATE SHOULD NOT BE TOO THICK AROUND THREAD								

160	Receive & Inspect for Damage & Mat'l Certs	0.00							
160									
Packaging	Memo	0.03							
Packaging									

⑤ 16-12-23 PD

8 DEC 08 2016 DAS 13 9-09

8x 8016-1219.

Work Order ID 151649

Wednesday, October 05, 2016 3:08:46 PM

151649

Page 3

Item ID: 647.7703

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Strut Assembly

Start Date: 9/20/2016 Start Qty: 8.00

8

Cust Item ID:

Required Date: 10/19/2016 Req'd Qty: 8.00

8

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170

QC5- Inspect part completeness to step on W/O

0.00

170

QC

Memo

0.03

Quality Control

INSPECT USING GO/NO GO GAUGE

817-01-11DAS
9
9-89

180

0.00

180

SprayPaint

Memo

0.33

Spray Painting

PRIOR TO PRIME MASK THREAD AND PRIME AS PER DWG

PRIMER BATCH: 134587817-01-12

190

QC14- Inspect Spray Paint

0.00

190

QC

Memo

0.03

Quality Control

8DAS
38
9-89

JAN 13 2017

Work Order ID 151649

Wednesday, October 05, 2016 3:08:46 PM

151649

Page 4

Item ID: 647.7703 Accept ***N900040100*** Setup Start ***NS1***
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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	Identify as per dwg & Stock Location: CCF114	0.00							
200									
Packaging	Memo	0.01							
Packaging									
210	QC21- Final Inspection - Work Order Release	0.00							
210									
QC	Memo	0.13							
Quality Control									

8 **JAN 16 2017** **DAS 6 9-89**

DAS 21 9-89 **JAN 16 2017**

DAS 21 9-89 **JAN 16 2017**

Picklist Print

Wednesday, October 05, 2016 3:08:45 PM

Page 1

Work Order ID: 151649

151649

Parent Item: 647.7703

647 7703

Parent Item Name: Strut Assembly

Start Date: 9/20/2016

Required Date: 10/19/2016

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP REV:A 15.01.07 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
647.7712 *647 7712* Strut Tube		Manufactured	No				Each	43.0000	**	8			
Location Loc Qty Loc Code													
WA002 43													
140985 1													
145176 42													
647.7713 *647 7713* Strut Thread		Manufactured	No				Each	25.0000	**	8			
Location Loc Qty Loc Code													
WA002 25													
145177 2													
148267 23													
647.7714 *647 7714* Strut Tube		Manufactured	No				Each	13.0000	**	8			
Location Loc Qty Loc Code													
WA001 13													
141911 1													
145178 12													

16-12-06
JLM

16-12-06
JBL

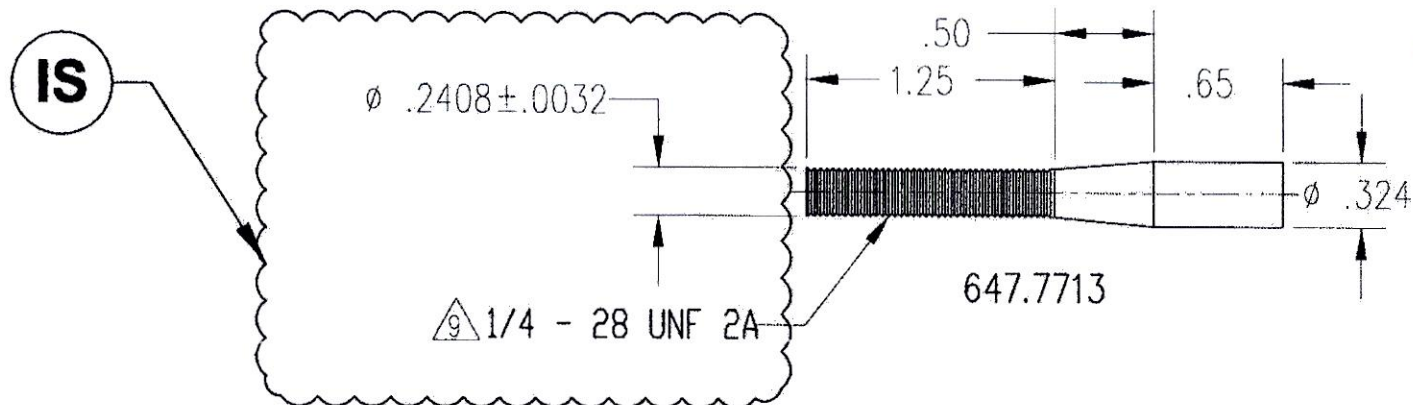
16-12-06
JBL



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

ENGINEERING CHANGE NOTICE NO. 05397		SHEET 1 OF 1	
DWG NO. 647.7700	REV: A	PREPARED BY T. CROSS	DATE: 05/02/16
DWG TITLE: STRUT ASSY			
APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: <i>[Signature]</i>
REASON: REVISED DIMENSION			EFFECT ON DWG ☐ INC. ☒ UNINC.
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE			ECR: 16-028
			ACTION LIST: 1.

SHEET 2, ZONE D4 IS:



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151649 *MLJ*
10-10-06

DOCUMENTS EFFECTED:	CHANGE CATEGORY	DER REVIEW REQUIRED
☐ PATTERN ☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BOM	☐ MAJOR ☒ MINOR	☐ YES ☒ NO



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

ENGINEERING CHANGE NOTICE NO.

05110

SHEET 1 OF 1

DWG NO. 647.7700

REV: A

PREPARED
BY

A. QUAN

DATE: 08/21/15

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: STRUT ASSY

APPROVED BY:

ENGR

MFG

QC

EFF.

CURRENT ORDER

TRANSACTION CODES (TC):
A-ADD
R-REVISE
C-CREATE
D-DELETE

REASON: REVISED FINISH CALLOUT AS PER ECR 15-209

SHEET 1, NOTES IS:

ACTION: UPDATE MO & WO

NOTES:

- 1 MATERIAL: 4130 STEEL PER AMS-T-6736, .50" OD, .083" WALL THK.
- 2 MATERIAL: 4130 STEEL PER AMS-T-6736, .375" OD, .075" WALL THK.
- 3 MATERIAL: 4130 STEEL PER AMS-T-6736, .324" OD.
- 4 FINISH: PRIME IAW MIL-P-2337J TYPE I CLASS N: 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES
6. IDENTIFY IAW MPP-120.
- 7 WELD IAW MIL-STD-2219. TIG WELD WITH FILLER ROD
- 8 FINISH: CAD PLATE IAW QQ-P-416F CLASS I TYPE II
- 9 MASK THREAD PRIOR TO FINISH

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION
DOCUMENTS EFFECTED: ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM					
CHANGE CATEGORY ☐ MAJOR ☐ MINOR					
DER REVIEW REQUIRED ☐ YES ☐ NO					

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NOTES:

1. MATERIAL: 4130 STEEL PER AMS-T-6736, .50" OD, .083" WALL THK.
2. MATERIAL: 4130 STEEL PER AMS-T-6736, .375" OD, .075" WALL THK.
3. MATERIAL: 4130 STEEL PER AMS-T-6736, .324" OD.
4. FINISH: PRIME IAW MIL-P-2337J TYPE I CLASS N; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES
6. IDENTIFY IAW MPP-120.
7. WELD IAW MIL-STD-2219, TIG WELD WITH FILLER ROD
8. FINISH: CAD PLATE IAW MIL-C-5541 CLASS 1A
9. MASK THREAD PRIOR TO FINISH

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	LAST PROTOTYPE REVISION #10		N/C
2	INITIAL RELEASE	12/02/08	P BRAVO
3	INCORPORATED ECN DATE:	11/13/14	P BRAVO

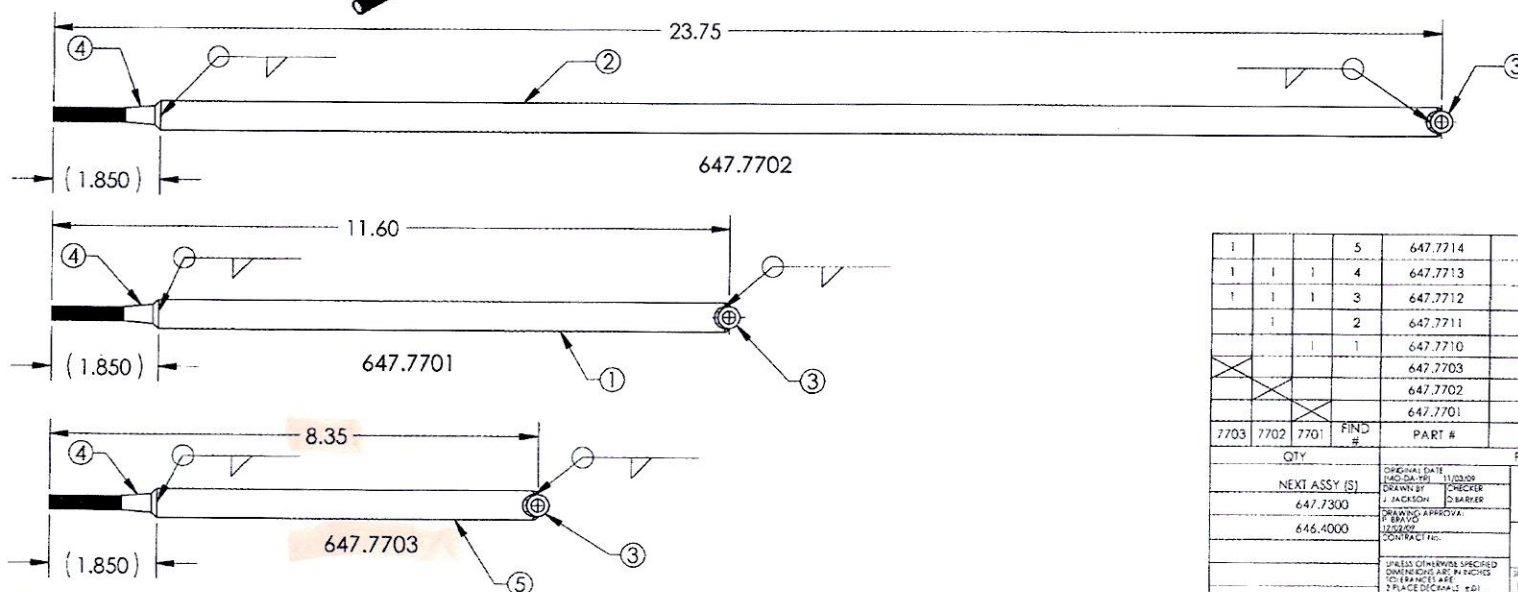
647.7701

647.7703

647.7702

UNINCORPORATED ECN(s)

05110, 05397,



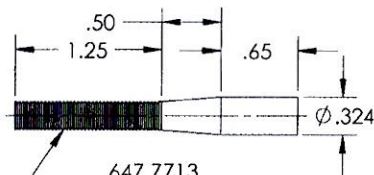
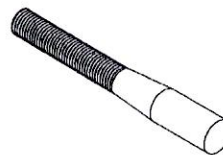
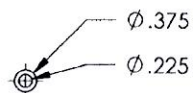
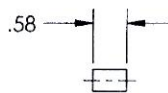
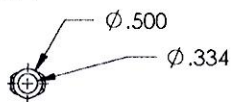
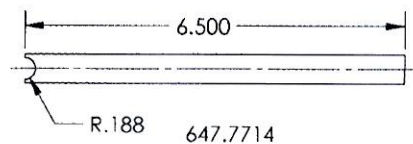
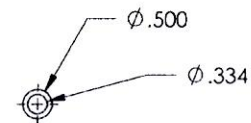
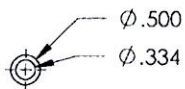
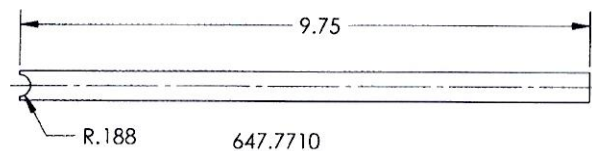
1			5	647.7714	STRUT TUBE	△	
1	1	1	4	647.7713	STRUT THREAD	△	△
1	1	1	3	647.7712	STRUT TUBE	△	
			2	647.7711	STRUT TUBE	△	
			1	647.7710	STRUT TUBE	△	
				647.7703	STRUT ASSY		△△
				647.7702	STRUT ASSY		△△
				647.7701	STRUT ASSY		△△
7703	7702	7701	FINO #	PART #	DESCRIPTION	MATL	SPEC.
QTY				PARTS LIST			
NEXT ASSY (S)				ORIGINAL DATE 11/03/08			
647.7300				DRAWN BY J JACKSON			
646.4000				CHECKED D BARBER			
				DRAWING APPROVAL P BRAVO			
				ISSUED CONTRACTED:			
				UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
				2 PLACE DECIMALS ±.01			
				3 PLACE DECIMALS ±.005			
				ANGLES ±.5°			
				SCALE NONE			
				SHEET 1 OF 2			

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

STRUT ASSY

REV 8 07/16/16 ENG NO. 647.7700

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1/4 - 28 THREAD

ORIGINAL DATE
10/20/19
DRAWN BY
J. JACKSON
DRAWING APPROVAL
P. BRAND

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCFANSIDE, CA. 92056-3512 (760)724-5300

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLAC: DECIMALS ±.01
3 PLAC: DECIMALS ±.005
ANGLES ±.5°

CONTRACT NO.
SHEET 2 OF 2
SCALE: NONE
REV. A
DATE: 07/20/16
647.7700



2455, Halpern, Saint-Laurent, QUÉBEC, H4S 1N9
Tel.:(514)335-3666 Fax.:(514)335-3868
Internet : www.groupaltech.com

Bon de livraison / Packing Slip
et / and
Certificat de conformité / Certificate of Compliance

Bon-Livraison / Pk.Slip # : 123702-1 15/12/2016
Bon-Commande. / W.Order # : 123702
Client P.O. # : 34576
Transport :

Envoyé à / Ship to

DART AEROSPACE LTD
1270 ABERDEEN STREET
HAWKESBURY
ONTARIO, CANADA K6A 1K7

Commandé par / Order by

DART AEROSPACE LTD (1427)
1270 ABERDEEN STREET
HAWKESBURY
ONTARIO, CANADA K6A 1K7

#	No. Job No. Réf	NoSerie / Part Number Nom Produit / Product	Traitement Process	Poids Weight	Qté Qty	Envoyé Sent	A venir BO
1	UNIT	647.7701 Rev.	CADMIUM YELLOW PER QQ-P-416F TY:2 CL:1 + HYDROGEN ENBRITAMENT RELIEF (BAKE)	0.00	5	5	0
2	UNIT	647.7702 Rev.	CADMIUM YELLOW PER QQ-P-416F TY:2 CL:1 + HYDROGEN ENBRITAMENT RELIEF (BAKE)	0.00	7	7	0
3	UNIT	647.7703 Rev.	CADMIUM YELLOW PER QQ-P-416F TY:2 CL:1 + HYDROGEN ENBRITAMENT RELIEF (BAKE)	0.00	8	8	0

Sp/16-12-19

Notes Additionnelles / Additional Notes

Epaisseur réelle
Actual Thickness

Inspecteur Qualité
Quality Inspector

Réçu par
Received By

Nous certifions que les pièces énumérées ci-dessus ont été traitées en conformité avec votre commande et vos spécifications et rencontrent les exigences.
Notre responsabilité financière et légale ne sera pas supérieure au montant de la facture issue.

We hereby certify that the parts listed above have been process in accordance with your purchase order and specifications and are in conformance with your requirements.
Our financial and legal responsibility will not be higher than the amount of invoice.



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34576**

Purchase Order Date 12/8/2016

PO Print Date 12/8/2016

Page Number 2 of 2

Order From :

GROUP ALTECH
2455 HALPERN

VC-ALT01

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

ST LAURENT, MONTREAL H4S 1N9

Contact Name

Vendor Phone 514-335-3666

Ship To Contact

Ship To Phone

Ship Via: FedEx Overnight collect

Ship Acct:

151649

647.7703 STRUT

12/22/2016

Yes

12/22/2016

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FOB Origin

8.00

\$9.75

\$78.00

Cad Plating is to be done per QQ-P-416F Class I Type II.

PLEASE NOTE: HYDROGEN EMBRITTLEMENT IS INCLUDED IN PRICING PER UNIT
CAD PLATE SHOULD NOT BE TOO THICK AROUND TRHREAD

8/16-12-19

Line Total:

\$78.00

4 71401-45

PROCUREMENT
QUALITY CLAUSES

12/22/2016

1.00

\$0.00

\$0.00

No

12/22/2016

Procurement Quality Clauses

A004 FAA-PMA /TSO

A005 RIGHT OF ENTRY

A016 PERSONNEL QUALIFICATION

A024 PROCESS CERTIFICATIONS

A025 CERTIFICATE OF CONFORMANCE

A041 QUALITY MANAGEMENT SYSTEM

A042 DART NOTIFICATION BY SUPPLIER

A043 RETENTION OF QUALITY DOCUMENTS

Line Total:

\$0.00

PO Total:

\$195.00

u
cx

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 1

Change Date: 12/8/2016